Purchasing Agent: JARED GARDNER

July 9, 2003

Item: HIGHWAY CCTV SURVEILLANCE SYSTEMS

Vendor: 01538H UTAH CONTROLS INC.

11075 SOUTH STATE STREET #1

SANDY, UT 84070

Telephone: 801 990-1950

Fax number: 801 990-1955

Contact: **ROY STEPHENSON**

Email: rstephenson@utahcontrols.com

Pelco Brand/trade name:

Price: SEE ATTACHED PRICE LIST

Terms: **NET 30**

Effective dates: 07/8/03 through 07/08/04

Days required for delivery: 2 Weeks Price guarantee period: ONE YEAR

Minimum order: ONE UNIT

Min shipment without charges:

Other conditions: (2) TWO – ONE YEAR RENEWAL OPTIONS

THIS IS A NEW CONTRACT

This contract covers only those items listed in the price schedule. It is the responsibility of the agency to ensure that other items purchased are invoiced separately. State agencies will place orders directly with the vendor (creating a PG in Finet) and make payments for the same on a PV referencing the original PG. Agencies will return to the vendor any invoice which reflects incorrect

pricing.

PRICE SCHEDULE

1.	DOME CCTV CAMERA SYSTEM (¶3.0)	\$ <u>1,824.00</u> each camera system
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2. DOME CAMERA CABLE ASSEMBLY (¶5.0) \$155.00 per cable plus

\$<u>.71</u> per foot

\$<u>.71</u> per foot

3. INTEGRATED CCTV CAMERA
AND POSITIONER SYSTEM (¶4.0) \$2,454.00 each camera system

4. INTEGRATED CAMERA CABLE ASSEMBLY \$155.00 per cable plus

(¶5.0)

5. NTCIP UPGRADE KIT (¶2.4.5) (Optional) \$58.00 each camera system

6. DIGITAL VIDEO UPGRADE KIT (¶2.4.6) Pelco Net 101 T \$772.00 each

Pelco Net 104 A \$1,048.00 each Pelco Net 4001 A \$2,013.00 each

(Optional)

7. 2-YEAR EXTENDED WARRANTY \$\frac{150.00}{2}\$ per camera

(Optional)

8. TRAINING SESSION (¶6.0) \$300.00 Lump sumper session

9. ENGINEERING FIELD SERVICES (¶8.0) \$65.00 per hour

10. SPECIALIZED TEST EQUIPMENT AND \$680.00

INSTALLATION TOOL KIT (¶9.1.2)

11. DISCOUNT ON RELATED EQUIPMENT <u>24</u> % off Dealer Level Pricing

IN VENDOR'S CATALOG

Please see Pelco Catalog for related CCTV parts/items. To obtain a copy of this please contact the vendor.

SPECIFICATIONS

1.0 SCOPE

This specification sets the minimum requirements for the purchase of CCTV Camera Surveillance System(s) used by Intelligent Transportation Systems (ITS) for Traffic Operations, Advanced Traffic Management, Advanced Traveler Information, Homeland Security, and broadcast media feeds.

The camera system shall be a color / monochrome video camera to be deployed in a harsh outdoor environment. It shall be adjacent to roadways and freeways for traffic management surveillance. The components shall include an adaptive color camera with zoom lens, environmental housing, environmental pan / tilt positioner, and cabling.

1.1 UDOT's camera control communication infrastructure is currently based on Cohu's ER2221B protocol. In the future the communications protocol will be migrated to NTCIP 1205.



- 1.1.1 The proposed camera systems should communicate using the ER2221B protocol and be capable of future field upgrading to NTCIP. If the ER2221B protocol is not currently available from the vendor, other similar protocols will considered depending on the effort required to implement it into UDOT's Traffic Operations Center computer systems.
- 1.1.2 The proposed camera systems should be capable of supporting NTCIP 1205 functions, as described in paragraph 2.4.5. Preference will be given to systems that are NTCIP ready and have a transition plan, if bids are equal.
- 1.1.3 There should be a transition plan which may include changing of camera system firmware, hardware, adding or removing a protocol converter, etc. The transition should be easily implemented in the field in less than two hours at each camera site.
- 1.2 UDOT's video communications is currently based on NTSC (RS-170 color) output from the camera system. In the future the video output will be migrated to MPEG2 over TCP/IP. Preference will be given to camera systems with both NTSC and expansion capability to MPEG2 outputs, if bids are equal.

2.0 GENERAL REQUIREMENTS

2.1 ENVIRONMENTAL REQUIREMENTS

- 2.1.1 The enclosure shall be fabricated from corrosion resistant Type 5.52H32 aluminum, equivalent or better. All internal parts shall be corrosion protected.
- 2.1.2 The camera with positioner assembly shall be provided in either white or gray enamel, UV protected, exterior finish and meet NEMA 4X, IP66 standard.
- 2.1.3 The total weight of the camera with positioner assembly shall not exceed 20 pounds.
- 2.1.4 The camera and positioner shall be rated for operational wind loading up to 145 Km/hr (90 mph), and shall withstand a wind velocity of up to 210 Km/hr (130 mph).
- 2.1.5 The camera, positioners, and the electronics that are installed in the same enclosure shall be rated to operate at the ambient conditions of:

Temperature	Humidity	Elevation
-34 °C to +60 °C (-30 °F to +140 °F)	0% to 100%, & blowing rain,	3000 m (10,000 ft)
	snow, hail, and sleet.	

2.1.6 Components installed in a cabinet shall be rated for:

<u>Temperature</u>	Humidity	Elevation
-34 °C to +74 °C (-30 °F to +165 °F)	0% to 95% non-condensing	1500 m (5,000 ft)
-34 °C to +60 °C (-30 °F to +140 °F)	0% to 95% non-condensing	3000 m (10,000 ft)

- 2.1.7 The camera, positioner, and all electronics mounted in the same housing shall comply with MIL-E 5400T, paragraph 3.2.24.6 shock requirements (not including the lens).
- 2.1.8 All environmental enclosures shall comply with MIL-E-5400T, paragraphs 3.2.24.7 through 3.2.24.9 Air Contaminants requirements.



All environmental enclosures shall comply with MIL-E-5400T, paragraph 3.2.24.10 2.1.9 Explosion requirements.

2.2 CAMERA AND OPTICS

- 2.2.1 The Camera shall be specifically designed to operate under low light conditions and shall function satisfactorily over a wide range of dynamic lighting conditions ranging from low light to full sunlight.
- 2.2.2 The camera shall automatically switch from color in the daytime to monochrome at night. The camera shall have the ability to manually switch between color and monochrome.
- 2.2.3 The camera sensor shall use color Charged-Coupled Device (CCD) technology, and shall meet or exceed the following requirements:
 - 2.2.3.1 Image sensor: ¼ inch color image sensor, blemish free, CCD.
 - 2.2.3.2 Signal Format: NTSC standard (RS-170 color) 2:1 interlace
 - 2.2.3.3 Active picture elements: 724 Horizontal and 494 Vertical (pixels)
 - 2.2.3.4 Contrast variation: 5 Percent overall, or less
 - 2.2.3.5 Sensitivity at 35 IRE with the lens open to f1.6 (or equivalent sensitivity)
 - 3.0 lux @ 1/60 sec. (Color Daytime mode)
 - 0.2 lux @ 1/4 sec. (Color Daytime mode)
 - 0.3 lux @ 1/60 sec. (Mono Nighttime mode)
 - 0.02 lux @ 1/4 sec. (Mono Nighttime mode)
 - 2.2.3.6 Automatic gain control: 0-28 dB
 - 2.2.3.7 Signal to noise ratio: Greater than 50 dB
 - 2.2.3.8 Color balance: Auto tracking color balance and manually adjustable
 - 2.2.3.9 Electronic shutter: From 1/2 to 1/30,000 second
 - 2.2.3.10 Digital Zoom: 10X
- 2.2.4 Motorized Zoom Lens – Each camera shall be provided with a motorized digital zoom lens with automatic iris (including manual over-ride) and neutral density spot filter. All lens motors shall be clutch protected to prevent damage due to overload.
- 2.2.5 The camera lens should provide the minimum capabilities:
 - 2.2.5.1 Automatic focus control with manual focus over-ride. The lens shall not auto-focus on debris on the window
 - 2.2.5.2 Optical Zoom: 23X (in addition to the 10X digital zoom)
 - 2.2.5.3 Optical Focal length: 3.6mm to 82.8 mm or greater.



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- 2.2.5.4 Effective digital focal length: 82.8mm to 828mm
- 2.2.5.5 Aperture range: f/1.6 (wide) to f/3.6 (telephoto)
- 2.2.5.6 Automatic Iris control with manual over-ride.
- 2.2.6 The video output shall be protected with 75 ohm isolated base band video surge protector capable of surge handling of 18 kA, 110 Joules. The insertion loss shall be less than 0.3 dB over a frequency range of dc to 15 MHz.
- 2.2.7 The video output shall be synchronized with the 60 Hz power input.
- 2.2.8 The system shall be fully functional with an input power of 89 VAC to 135 VAC, 57-63 Hz with a power factor better than 0.85.
- 2.2.9 The combined camera and positioner shall not be in excess of 50 Watts, not excluding the heater sub-system.
- 2.2.10 The camera shall have a heater and circulation system in the enclosure, as required to melt frost, snow, and ice that might accumulate on the outside of the enclosure's window. The heater shall be thermostatically controlled and should not exceed 60 Watts.

2.3 CONTROL MODULE

- 2.3.1 The control module is an interface for controlling the camera and camera positioner; video processing, and for interfacing with communications.
- 2.3.2 The control module shall be integrated into the camera.
- 2.3.3 Each control module (camera) shall have a unique address, which shall be software configurable. The control module shall respond to a command only if it is addressed.
- 2.3.4 The control module shall receive data from the Traffic Operations Center, decode the command data, perform error checking, and drive the pan/tilt unit, camera controls, and motorized zoom lens. At a minimum, the control module shall provide the following functions:
 - 2.3.4.1 Detect light level, and adjust the control Color / Monochrome Switching.
 - 2.3.4.2 Zoom In and Out
 - 2.3.4.3 Focus Near and Far
 - 2.3.4.4 Tilt Up and Down
 - 2.3.4.5 Camera Power On and Off
 - 2.3.4.6 Manual Iris Open and Close
 - 2.3.4.7 Pan Right and Left
 - 2.3.4.8 Preset Position Control
 - 2.3.4.9 Positioner's Speed Control
- 2.3.5 The camera shall be capable of accepting a minimum of 2 external alarm inputs.
- 2.3.6 There shall be capability for field programmable text placed in the video output. Text shall include labels or titles, including display of camera ID, preset ID, azimuth, and alarms. There shall be the capability to manually switch text messages on and off.

- 2.3.7 The control module shall have provision to blank the video in eight or more configurable privacy zones.
- 2.3.8 All configuration settings shall be stored be non-volatile. All configuration information shall not be affected by a loss of power.
- 2.3.9 The control module shall be firmware based. There shall be tools and procedures provided for field upgrading the firmware. These shall be provided with the diagnostics.
- 2.3.10 The control module shall be configured using a laptop computer communicating through the "com port". The vendor shall supply a "configuration and diagnostic" program adequate to run on a "Windows 95" and better operating system.

2.4 COMMUNICATIONS AND PROTOCOL

- 2.4.1 There shall be an RS-232 and/or RS-422 communications port in the control module. This port shall receive commands to control the camera operations and configure the control module.
- 2.4.2 All CCTV control functions must be accessible and operational via a Windows based interface using a standard RS-232 serial connection. (See paragraph 9.2)
- 2.4.3 The minimum port configuration of asynchronous DTE; data rates of 2400 to 9600 BAUD; even, odd, or no parity; and one stop bit.
- 2.4.4 The control module shall communicate and function utilizing Cohu's non-proprietary "ER2221B Receiver Communications Protocol". For ER2221B protocol refer to: http://www.cohu-cameras.com/opmans/mpc2221pro.pdf
 - 2.4.4.1 If the ER2221B protocol is not currently available from the vendor, other similar protocols will be considered depending on the effort required to implement it into UDOT's Traffic Operations Center computer systems. The vendor shall provide the detailed specification of the alternative protocol in electronic format. The vendor shall license the agency to use of the alternate protocol. The agency will have exclusive right to evaluate the alternate protocol and determine the feasibility for use. If feasible, the agency will make the software changes in the agency's computers to implement the alternative protocol.
- 2.4.5 The control module protocol should be upgradeable to the following NTCIP configuration.
 - 2.4.5.1 NTCIP 1205 "Objects for CCTV Camera Control". The NTCIP 1205 protocol implementation shall comply with all mandatory conformance groups and with the "Extended Functions" and "Motion Control" conformance groups.
 - 2.4.5.2 NTCIP 2301 SNMP
 - 2.4.5.3 NTCIP 2101 PMPP
- 2.4.6 The Video output should be upgradeable to generic MPEG-2 digital outputs.

2.5.1 The vendor shall provide configuration and diagnostic utilities as described in ¶9.2.

2.6 CAMERA SYSTEM DOCUMENTATION

- 2.6.1 Each system shall be provided with manual(s) with user's operation, and installation instructions. This shall describe the function and use of all of the configuration parameters.
- 2.6.2 Each system shall be provided with a maintenance manual, which shall describe the electronic circuit operations, troubleshooting, and have adequate information to maintain the system to the component level. The factory acceptance test shall be included in the manual.
- 2.6.3 There shall also be a software user's manual with details on interfacing to the system. There shall be descriptions for all of the communication protocol and the meaning of the data included.

2.7 CAMERA INTERFACE CABLE

- 2.7.1 A camera cable shall be provided to interface the camera to a roadside cabinet. The camera cable shall be terminated at the camera end with an outdoor approved, mil grade or equivalent connector.
- 2.7.2 The wiring under the connector's strain relief shall be potted to hermetically seal the connector from moisture.
- 2.7.3 The cable shall provide power to the camera, digital communications to the Control Module, and video from the camera. Consideration should be given to future network communications for digital video.
- 2.7.4 The cable is to be pulled from the camera, down the pole, and through conduit to the roadside cabinet.
- 2.7.5 The cable shall be compliant with NEC requirements for installation in outdoor conduit.
- 2.7.6 The outer jacket of the cable shall be rated for 600 Volts.
- 2.7.7 The cable should be jell filled and the outer jacket should be polyethylene or equivalent.
- 2.7.8 Camera Interface Cables shall not be included as part of the camera. Each cable shall be supplied as required and ordered for each project.

2.8 TESTING, INTEGRATION, AND SUPPORT

- 2.8.1 A factory test shall be successfully completed for each system. The test procedure shall be prepared by the vendor and be designed to demonstrate that the system operates correctly, and that all functions are in conformance with this document. The procedure should be reproducible at the agency.
- 2.8.2 Each system shall be installed and field-tested for proper operation for 30 consecutive days. During the testing period, all equipment at the system location shall operate without failure of any type.

- 2.8.3 If any component malfunctions or fails to provide the capabilities specified herein, the vendor shall replace or repair the defective equipment within 48 hours of notification by the agency. Costs of correcting component malfunctions shall be borne by the vendor.
- 2.8.4 After the component malfunction has been corrected to the satisfaction of the agency, a new 30-day test period shall be started.
- 2.8.5 The vendor shall stock the necessary replacement products to maintain the operability of the system for a period of at least 5 years.
- 2.8.6 The vendor shall provide telephone customer support as required during normal business hours, at no cost during the warranty period.

2.9 WARRANTY

- 2.9.1 The system shall be warranted for a minimum of three (3) years from date of delivery, or for one year from time of installation, whichever is longer.
- 2.9.2 The period of warranty coverage shall not be less than the manufacturers usual and customary warranty period.
- 2.9.3 The agency, or the manufacturer's representative, may make minor warranty repairs with the consent of the manufacturer. The manufacturer will make all other warranty repairs. The vendor will bear all costs including labor, parts, and shipping charges.
- 2.9.4 Revisions, updates and new releases of the system, furnished software, and firmware shall be provided during the warranty period without additional costs. With the consent of the manufacturer, the agency shall assume responsibility for field installation of updates to systems that have been in use for more than 30 days.

3.0 DOME CCTV CAMERA SYSTEM

3.1 DESCRIPTION

The CCTV Dome Camera System has a camera, control module and pan/tilt unit combined into a dome enclosure that can be deployed in harsh outdoor environmental conditions.

3.2 The dome camera system shall comply with the requirements specified in Section 2.0.

3.3 ENVIRONMENTAL ENCLOSURE

- 3.3.1 A sunshield shall be provided and mounted in such a fashion to allow air to pass over the external surface of the camera while keeping direct sun off the camera housing.
- 3.3.2 The enclosure shall be fabricated from corrosion resistant lightweight aluminum, equivalent or better. All parts shall be corrosion protected.
- 3.3.3 The system shall be designed for use in outdoor applications.
- 3.3.4 The dome base shall be provided in either white or gray enamel, UV protected exterior finish and meet NEMA 4X, IP66 standard.



- 3.3.5 The total weight of the camera assembly shall not exceed 20 pounds.
- 3.4 DOME CAMERA POSITIONER (PAN/ TILT UNIT)
 - 3.4.1 Provide the minimum pan / tilt capabilities:
 - 3.4.1.1 360° continuous pan range
 - 3.4.1.2 Vertical Tilt range of $+ 02^{\circ}$ to -90° .
 - 3.4.1.3 Manual Pan speed variable from 0.1°/sec. to 80°/sec.
 - 3.4.1.4 Manual Tilt speed variable from 0.1°/sec. to 40°/sec
 - 3.4.1.5 Minimum 64 preset positions with accuracy of +/- 0.1°
 - 3.4.2 The Dome CCTV Camera System should be capable of being mounted on face of wall, pole and pedestal.
 - 3.4.2.1 The camera assembly shall be pipe mounted to a 1.5 inch NPT pipe.
 - 3.4.2.2 The cabling to the camera shall be routed through the fitting.
 - 3.4.3 The Dome CCTV Camera System should be capable of being mounted on a camera lowering system.
- 3.5 METHOD OF MEASUREMENT

The Dome CCTV Camera System will be measured as a unit, each which shall include all materials, cabling, documentation, warranty and equipment incidental thereto.

3.6 BASIS OF PAYMENT

The camera assembly, measured as provided above, will be paid for at the contract unit price each which price shall be payment in full for furnishing a color / monochrome camera, zoom lens, integrated receiver/driver, environmental enclosure, pan and tilt unit, mounting hardware, 3-YEAR warranty and for all labor, equipment, transportation, and incidentals necessary to provide these items.

4.0 INTEGRATED CCTV CAMERA AND POSITIONER SYSTEM

4.1 DESCRIPTION

The Integrated CCTV Camera and Positioner System is an integrated day / night camera, control module, and pan / tilt unit combined into a tube-type enclosure that can be deployed in harsh outdoor environmental conditions. The camera enclosure / positioner shall be an integrated assembly, designed to be installed on top of a vertical steel pole. The camera shall be installed in the camera enclosure.

4.2 The Integrated CCTV Camera and Positioner System shall comply with the requirements specified in Section 2.0.

4.3 ENVIRONMENTAL ENCLOSURE

4.3.1 A sunshield shall be provided and mounted in such a fashion to allow air to pass over the external surface of the camera while keeping direct sun off the camera housing. The front



portion of the shield shall be adequate to prevent direct sunlight from striking the housing viewing window while not obscuring the field of view.

- 4.3.2 The enclosure shall be fabricated from corrosion resistant lightweight aluminum, equivalent or better. All internal parts shall be corrosion protected.
- 4.3.3 The enclosure shall be provided in either white or gray enamel, UV protected, exterior finish and meet NEMA 4X, IP66 standard.
- 4.3.4 The total weight of the camera assembly shall not exceed 20 pounds.
- 4.3.5 The housing shall be sealed and pressurized to a minimum of 5 psi with dry nitrogen.
- 4.3.6 Provide a programmable alphanumeric notification message when the pressure in the camera housing drops to less than two psi to warn of a low-pressure condition. The message should be superimposed on the camera video output

4.4 CAMERA POSITIONER (PAN/ TILT UNIT)

- 4.4.1 The positioner shall be designed for use in outdoor applications.
- 4.4.2 Provide the minimum pan/tilt capabilities:
 - 4.4.2.1 360° continuous pan range
 - 4.4.2.2 Vertical Tilt range of + 33° to -83°.
 - 4.4.2.3 Manual Pan speed variable from 0.1°/sec. to 80°/sec.
 - 4.4.2.4 Manual Tilt speed variable from 0.5°/sec. to 20°/sec
 - 4.4.2.5 Minimum 64 preset positions with accuracy of +/- 0.25°
- 4.4.3 The Integrated CCTV Camera and Positioner System should be capable of being mounted on the face of a vertical wall, pole, and pedestal.
- 4.4.4 The top of the pole (not supplied in this contract) shall have a flange for mounting the camera positioner. There are 0.3125 inch studs in the camera pole flange. There shall be a complimentary flange on the positioner. See Figure 4.4.4 for positioner flange details.
- 4.4.5 The camera positioner shall be supplied with a weather gasket to be placed between the flanges.
- 4.4.6 The cabling to the camera shall be routed through the center of the flange.

4.5 METHOD OF MEASUREMENT

The CCTV Position Camera System will be measured as a unit, each which shall include all materials, documentation, warranty and equipment incidental thereto.

4.6 BASIS OF PAYMENT

The camera assembly, measured as provided above, will be paid for at the contract unit price each which price shall be payment in full for furnishing a color/monochrome camera, zoom lens, integrated receiver/driver, environmental enclosure, pan and tilt unit, mounting hardware, 3-YEAR warranty and for all labor, equipment, transportation, and incidentals necessary to provide these items.



5.0 **CABLING**

5.1 **DESCRIPTION**

Cabling is defined as the necessary cables for carrying video signal, power and control signals.

5.2 The System Cabling shall comply with the requirements specified in Section 2.0.

5.3 METHOD OF MEASUREMENT

Cable lengths shall be bid as a fixed cost for the connector(s) and connector termination; plus a "cost per foot" for cable material. Cables will vary in length, depending on the specified project. Typical length of cable is approximately 150 feet.

5.4 BASIS OF PAYMENT

The cabling measured as provided above, will be paid for at the contract unit price each which price shall be payment in full for "pre-made" cable, which is to include: project specified cable length, connector termination and for all labor, equipment, transportation, and incidentals necessary to provide these items.

6.0 **TRAINING**

6.1 **DESCRIPTION**

Work under this item shall consist of providing qualified instructors and all materials for training Department personnel and other designated personnel in the operation and maintenance of the various Video Surveillance CCTV System equipment and components furnished under this contract.

6.2 TRAINING ELEMENTS

- The contractor shall develop and submit training course outlines and samples of all training aids and manuals to the engineer for approval at least forty-five (45) days prior to the proposed schedule start of the training sessions. Written approval of this material shall be required prior to the final scheduling of the training sessions or the final production of the training materials. Training shall not begin until after approval of the submitted training material, and a minimum of 10 working days after acceptance of the operation and maintenance manuals specified under the Item Documentation.
- 6.2.2 The training sessions described under this item shall include training on the use of the any test equipment that the contractor recommends.
- 6.2.3 All training sessions shall be conducted at locations within Salt lake County, Utah as designated by the department. Training sessions shall not overlap unless otherwise permitted by the Department.
- Training shall consist of formal classroom lectures as well as "Hands On" training. 6.2.4 "Hands – On" training shall consist of working with the actual equipment.
- 6.2.5 A training session shall consist of 4 hours minimum of classroom time. The attendance of a session shall have no greater than 10 people to maximize individual interaction. Each



session shall provide a basic understanding of the equipment and subsystems and their operation and maintenance. These training sessions shall include as appropriate, and as a minimum:

- 6.2.5.1 Background on concepts of equipment / subsystems and theory of operation;
- 6.2.5.2 Functional description of subsystem CCTV camera components, including, but not limited to, camera assemblies, control receivers, recording monitoring and communications equipment;
- 6.2.5.3 Procedures for installing and setting up equipment and components;
- 6.2.5.4 Basic trouble-shooting and fault determination procedures, including use of test equipment;
- 6.2.5.5 Preventative maintenance procedures and schedules.

6.3 METHOD OF MEASUREMENT

Training Session will be measured as a Lump Sum which shall cover all preparation of course materials, travel expenses and the time as well as human resources to provide and run the course at the predetermined location.

6.4 BASIS OF PAYMENT

Training, measured as provided above, will be paid for at the contract unit Price Lump Sum, which price shall be full compensation for furnishing instructor(s) and training materials; for providing training sessions; travel expenses and for all labor, equipment, transportation and incidentals necessary to complete this item of work.

7.0 QUALIFICATION OF MANUFACTURER

7.1 The vendor shall furnish a list of a minimum of three client/customer contacts, with ten or more camera systems deployed for one year or more, at sites similar to Utah's environment. Utah's environment is defined as deserts with temperatures up to 115° F in the summer and temperatures down to twenty-five below (-25° F) in the winter.

8.0 ENGINEERING FIELD SERVICES

8.1 DESCRIPTION

The supplier shall provide on-site services when requested by the State, including, but not limited to:

- 8.1.1 System configuration
- 8.1.2 Fine tuning video surveillance system signals
- 8.1.3 System integration
- 8.2 Experienced personnel familiar with use of the equipment and software shall provide Field services. Experienced personnel shall include, but not limited to instructors, engineers, and field technicians.

- 8.3 Payment for on-site services will be on a 8-hour "person day" basis.
- Time required to travel from out of state to Utah shall not be eligible for payment. Travel time within Utah between sites is included in the person-day.
- 8.5 All direct costs of travel, accommodations, and meals shall be included in the unit bid price per day for on-site services. No separate payments will be made for these travel costs.
- 8.6 On-site services may be required anywhere in the state of Utah. Field services will be scheduled at least two weeks in advance and not to exceed 8 weeks.
- 8.7 No payment will be made for on-site services which are required to trouble-shoot or resolve problems caused by malfunctions or failures of the vendor's equipment or for work done under warranty.

8.8 METHOD OF MEASUREMENT

Engineering field services will be measured as days, which shall be the number of training days as defined herein.

8.9 BASIS OF PAYMENT

Engineering field services, measured as provided above, will be paid for at the contract unit price per day, which price shall be full compensation for furnishing field personnel to provide engineering services; and for all labor, equipment, transportation, and incidentals necessary to complete this item of work.

9.0 INSTALLATION, SETUP, AND MAINTENANCE EQUIPMENT

9.1 TEST EQUIPMENT

- 9.1.1 The vendor shall provide a list of all test equipment, test cables, and installation tools recommended for installation and maintenance for each type of camera system. This list could include specialized electronic and optical devices, crimping tools, etc.
- 9.1.2 The vendor shall optionally bid a specialized test equipment and installation tool kit. The vendor shall optionally make available individual tools and components in the above kit.

9.2 CONFIGURATION AND DIAGNOSTIC UTILITIES

- 9.2.1 The vendor shall provide a utility program to configure and test the camera system. The program shall be capable of sending all of the camera control commands, configuring all parameters, and displaying the responses.
- 9.2.2 The program shall run on a technician's laptop computer, operating under Microsoft's Windows 98 operating system.
- 9.2.3 The agency shall have an unlimited license to copy and use the "configuration and diagnostic" program to test and maintain the camera systems.

9.3 METHOD OF MEASUREMENT



The Installation, Setup and Service Equipment Set will be measured as a separate unit as well as each individual installation and test equipment device. Each unit or individual test equipment device shall be included in the bid price, but will not be included in the determination of the bid award.

9.4 BASIS OF PAYMENT

Each Equipment device, measured as provided above, will be paid for at the contract unit price each which price shall be payment in full for furnishing a the listed device, 1-YEAR warranty and for all labor, equipment, transportation, and incidentals necessary to provide these items.

THIS BID RESULTED FROM BID # JG3172.

REPORTS: The contractor will submit yearly reports to the state purchasing agent showing quantities and dollar volume of purchases by each state agency and political subdivision. These reports will be due by April 8th of each year.

FINET COMMODITY CODE(S) (for agency use only) 55091000000- VEHICLE DETECTORS